

Amendments to the Claims: No claims are amended herein.

Listing of Claims:

Claims 1-2 (cancelled).

3. (original) A transport mechanism for transporting a reaction receptacle between stations of an automated analyzer, the reaction receptacle including a manipulating structure, said transport mechanism comprising:

a receptacle carrier assembly constructed and arranged to be rotatable about an axis of rotation and to receive a reaction receptacle and carry the reaction receptacle while said receptacle carrier assembly rotates about said axis of rotation;

a manipulating hook member interrelated with said receptacle carrier assembly so as to be movable with respect thereto, said manipulating hook member being constructed and arranged to be engageable with the manipulating structure of the reaction receptacle; and

a hook member drive assembly including a hook motor having fixed structure carried by said receptacle carrier assembly in a fixed position with respect thereto and a lead screw mechanism including a threaded shaft oriented in a generally radial direction with respect to said axis of rotation and having an end coupled to said manipulating hook member, said lead screw mechanism being operatively coupled with said hook motor and being constructed and arranged to convert powered motion of said hook motor into movement of said threaded shaft with respect to said fixed structure of said hook motor in either axial direction of said threaded shaft to thereby cause corresponding movement of said manipulating hook member with respect to said receptacle carrier assembly so that a reaction receptacle engaged by said manipulating hook member can be moved with respect to said receptacle carrier assembly.

Claims 4-10 (cancelled).

11. (previously presented) The transport mechanism of claim 3, wherein said manipulating hook member comprises:

a distributor hook constructed and arranged to be engageable with the manipulating structure of the reaction receptacle; and

a hook mounting structure from which said distributor hook extends, said hook mounting structure being coupled to said receptacle carrier assembly for guided movement in a generally radial direction with respect to said axis of rotation toward and away from said axis of rotation, wherein the end of said threaded shaft of said hook member drive assembly is operatively connected to said hook mounting structure for effecting powered movement of said hook mounting structure corresponding to axial movement of said threaded shaft caused by powered motion of said hook motor.

12. (previously presented) The transport mechanism of claim 3, wherein said receptacle carrier assembly comprises a plate mounted so as to be rotatable with respect to said axis of rotation, said plate having an opening formed therein and extending to an edge thereof in a direction that is generally radial with respect to said axis of rotation, wherein laterally extending portions of the reaction receptacle are supported on portions of said plate peripherally surrounding said opening when the reaction receptacle is carried by said receptacle carrier assembly.

13. (previously presented) The transport mechanism of claim 12, wherein said opening comprises an elongated slot extending in a generally radial direction with respect to said axis of rotation.

14. (previously presented) The transport mechanism of claim 11, wherein said receptacle carrier assembly comprises a plate mounted so as to be rotatable with respect to said axis of rotation, said plate having an opening formed therein and extending to an edge thereof in a direction that is generally radial with respect to said axis of rotation, wherein laterally extending portions of the reaction receptacle are supported on portions of said plate peripherally surrounding said opening when the reaction receptacle is carried by said receptacle carrier assembly, and wherein said hook mounting structure includes guide grooves formed in opposite sides thereof,

said guide grooves being slidably engaged by edge portions of said plate peripherally surrounding said opening to provide said guided movement of said hook mounting structure with respect to said axis of rotation.

15. (previously presented) The transport mechanism of claim 12, wherein said receptacle carrier assembly further comprises a housing mounted on said plate so as to cover an opening in the reaction receptacle thereby preventing debris from falling into the reaction receptacle when carried by the receptacle carrier assembly, said housing having an opening formed therein which cooperates with said opening formed in said plate so as to permit the reaction receptacle to be moved into and out of carried engagement with the receptacle carrier assembly.

16. (previously presented) The transport mechanism of claim 15, further comprising a shroud mounted to said plate and generally covering said plate and said housing.

17. (previously presented) The transport mechanism of claim 3, further comprising:
a shaft having a longitudinal axis coinciding with said axis of rotation, said receptacle carrier assembly being connected to said shaft so as to be rotatable therewith about said axis of rotation;

a pulley coaxially connected to said shaft;

a motor having an output shaft; and

a transmission belt coupling said pulley with said output shaft of said motor for transmitting powered rotation from said output shaft to said pulley and thus to said shaft and said receptacle carrier assembly.

18. (previously presented) The transport mechanism of claim 17, wherein said motor is a stepper motor.

19. (previously presented) The transport mechanism of claim 17, further comprising an arm position encoder constructed and arranged to be rotatable with said shaft for indicating an angular position of said shaft and said receptacle carrier assembly.

20. (previously presented) The transport mechanism of claim 12, wherein said hook motor is mounted on said plate with said threaded shaft extending through said hook motor and being oriented in a generally parallel arrangement with respect to said plate, said hook motor being coupled with said threaded shaft so as to adapted to cause powered rotation thereof, said lead screw mechanism being constructed and arranged to convert powered rotation of said threaded shaft into axial movement of said threaded shaft.

21. (previously presented) The transport mechanism of claim 3, further comprising:
a pulley operatively coupled to said receptacle carrier assembly;
a motor having an output shaft; and
a belt coupling said output shaft to said pulley so that rotational output of said motor via said output shaft causes corresponding rotation of said receptacle carrier assembly.

22. (previously presented) The transport mechanism of claim 3, further comprising at least one hook position sensor constructed and arranged to indicate at least one position of said manipulating hook member with respect to said receptacle carrier assembly.

23. (previously presented) The transport mechanism of claim 22, wherein said hook position sensor comprises an optical sensor mounted on said receptacle carrier assembly and a flag extending from said manipulating hook member, said optical sensor being constructed and arranged to detect the presence of said flag when said flag is in a predetermined position with respect to said optical sensor.

24. (previously presented) The transport mechanism of claim 23, further comprising a second optical sensor mounted on said receptacle carrier assembly and a second flag extending from said manipulating hook member, said second optical sensor being constructed and arranged to detect the presence of said second flag when said second flag is in a predetermined position with respect to said second optical sensor.

25. (previously presented) The transport mechanism of claim 3, further comprising a receptacle present sensor constructed and arranged to indicate the presence of a reaction receptacle carried by said receptacle carrier assembly.

26. (previously presented) The transport mechanism of claim 11, wherein said distributor hook includes a first portion extending from said hook mounting structure in a direction which is generally radial with respect to said axis of rotation and a second portion extending transversely with respect to said first portion in a generally vertical orientation.

27. (previously presented) The transport mechanism of claim 3, wherein said receptacle carrier assembly is rotatable about said axis of rotation over a range of about 340°.